

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-4 (canceled).

5. (currently amended): The method for producing a capacitor as claimed in ~~claim 1~~ claims 20 or 21, wherein the fine protrusion is at least one member selected from a metal oxide, a metal salt, a transition element-containing inorganic compound, a transition element-containing organic compound and a polymer compound.

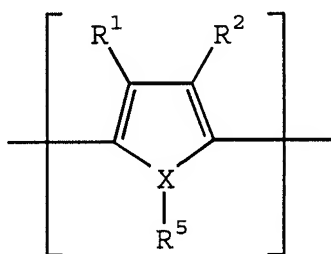
6. (currently amended): The method for producing a capacitor as claimed in ~~claim 1~~ claim 20 or 21, wherein the electric conductor is at least one member selected from a metal, an inorganic semiconductor, an organic semiconductor and carbon or a mixture thereof.

7. (currently amended): The method for producing a capacitor as claimed in ~~claim 1~~ claim 20 or 21, wherein the electric conductor is a laminated body having, as the surface layer, at least one member selected from a metal, an inorganic semiconductor, an organic semiconductor and carbon, or a mixture thereof.

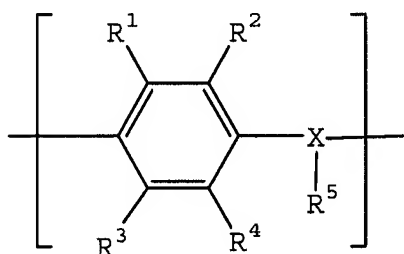
8. (currently amended): The method for producing a capacitor as claimed in ~~claim 1~~ claim 20 or 21, wherein the dielectric layer mainly comprises at least one member selected from metal oxides such as Ta₂O₅, Al₂O₃, TiO₂ and Nb₂O₅.

9. (currently amended): The method for producing a capacitor as claimed in ~~claim 1~~ claim 20 or 21, wherein the semiconductor layer is at least one member selected from an organic semiconductor layer and an inorganic semiconductor layer.

10. (original): The method for producing a capacitor as claimed in claim 9, wherein the organic semiconductor is at least one member selected from an organic semiconductor comprising benzopyrroline tetramer and chloranil, an organic semiconductor mainly comprising tetrathiotetracene, an organic semiconductor mainly comprising tetracyano-quinodimethane, and an organic semiconductor mainly comprising an electrically conducting polymer obtained by doping a dopant into a polymer containing a repeating unit represented by the following formula (1) or (2):



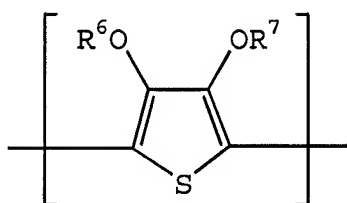
(1)



(2)

wherein R¹ to R⁴ each independently represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms, X represents an oxygen atom, a sulfur atom or a nitrogen atom, R⁵ is present only when X is a nitrogen atom, and represents a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms, and each of the pairs of R¹ and R², and R³ and R⁴ may combine with each other to form a cyclic structure.

11. (original): The method for producing a capacitor as claimed in claim 10, wherein the electrically conducting polymer containing a repeating unit represented by formula (1) is an electrically conducting polymer containing a structure unit represented by the following formula (3) as a repeating unit:



wherein R^6 and R^7 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated alkyl group having from 1 to 6 carbon atoms, or a substituent for forming at least one 5-, 6- or 7-membered saturated hydrocarbon cyclic structure containing two oxygen atoms when the alkyl groups are combined with each other at an arbitrary position, and the cyclic structure includes a structure having a vinylene bond which may be substituted, and a phenylene structure which may be substituted.

12. (original): The method for producing a capacitor as claimed in claim 10, wherein the electrically conducting polymer is selected from polyaniline, polyoxyphenylene, polyphenylene sulfide, polythiophene, polyfuran, polypyrrole, polymethylpyrrole, and substitution derivatives and copolymers thereof.

13. (previously presented): The method for producing a capacitor as claimed in claim 11, wherein the electrically conducting polymer is poly(3,4-ethylenedioxythiophene).

14. (original): The method for producing a capacitor as claimed in claim 9, wherein the inorganic semiconductor is at least one compound selected from molybdenum dioxide, tungsten dioxide, lead dioxide and manganese dioxide.

15. (original): The method for producing a capacitor as claimed in claim 9, wherein the electrical conductivity of the semiconductor is from 10^{-2} to 10^3 S/cm.

16. (currently amended): A capacitor produced by the production method claimed in ~~claim 1~~ claim 20 or 21.

17. (original): The capacitor as claimed in claim 16, wherein the impregnation ratio of the semiconductor is 85% or more.

18. (previously presented): An electronic circuit using the capacitor claimed in claim 16.

19. (previously presented): An electronic device using the capacitor claimed in claim 16.

20. (new): A method for producing a capacitor comprising, as one electrode, an electric conductor having formed on the surface thereof a dielectric layer and, as the other part electrode, a semiconductor layer formed on the electric conductor by energization using the electric conductor as a anode, wherein feather-shaped fine protrusions are formed on the dielectric layer before energization having a width of about 0.1 to about 120 nm and a height of about 0.1 to about 600 nm.

21. (new): A method for producing a capacitor comprising, as one electrode, an electric conductor having formed on the surface thereof a dielectric layer and, as the other part electrode, a semiconductor layer formed on the electric conductor by energization using the electric conductor as the anode, wherein fine protrusions are formed on the dielectric layer before energization, said electric conductor having inner pores formed therein, and wherein a majority of the fine protrusions overlay an outer surface of the dielectric layer and/or overlay an inner pore surface of the electric conductor within 10 μm from the outer surface.

22. (new): The method for producing a capacitor as claimed in claim 20 or 21, wherein the fine protrusions have a width of 0.1 to 60 nm.

23. (new): The method for producing a capacitor as claimed in claim 21, wherein 80% or more of the fine protrusions overlay an outer surface of the dielectric layer and/or overlay an inner pore surface of the electric conductor within 10 μm from the outer surface.

24. (new): The method for producing a capacitor as claimed in claim 20 or 21, wherein the fine protrusion is at least member selected from a metal salt, a transition element-containing inorganic compound and a transition element-containing organic compound.

25. (new): The method for producing a capacitor as claimed in claim 20 or 21, which comprises electrolytically forming the fine protrusions on the dielectric layer.